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A clean version of the pending claims with instructions for entry of any claim amendments / additions / cancellations pursuant to 37 C.F.R. § 1.121(c)(1)(i) is included beginning on page 2 of this communication. Applicants respectfully request reconsideration of the application in view of the following amendments and remarks.

IN THE CLAIMS:

Claims 1 – 75. (canceled)

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76. (new) A method of imaging, comprising:
- a) providing cells, a chimeric polypeptide, and an imaging agent; wherein said cells possess or are suspected of possessing polypeptides comprising RGD motifs; wherein said chimeric polypeptide comprises an illumination domain, and a target recognition domain; wherein said illumination domain comprises a luciferase protein; wherein said target recognition domain comprises an RGD sequence; wherein said RGD sequence is SEQ ID NO: 1; wherein said imaging agent is luciferin;
 - b) administering said chimeric polypeptide to said cells;
 - c) administering said imaging agent to said cells; and
 - e) measuring the activity of said illumination domain by detecting signal from said illumination domain.

77. (new) The method of Claim 76, wherein said cells comprise *in vitro*, *in situ*, *ex vivo*, and *in vivo* cells.
78. (new) The method of Claim 76 wherein said cells comprise tumor cells.
79. (new) The method of Claim 78, wherein said tumor cells are undergoing neovascularization.
80. ~~(new)~~ A method of imaging, comprising:
- a) providing cells, a chimeric polypeptide, and an imaging agent; wherein said cells possess or are suspected of possessing polypeptides comprising RGD motifs; wherein said chimeric polypeptide comprises an illumination domain, and a target recognition domain; wherein said illumination domain comprises a bioluminescent polypeptide; wherein said target recognition domain comprises an RGD sequence; wherein said RGD sequence is SEQ ID NO: 1;
 - b) administering said chimeric polypeptide to said cells;
 - c) administering said imaging agent to said cells; and
 - e) measuring the activity of said illumination domain by detecting signal from said illumination domain.

81. (new) The method of Claim 80, wherein said cells comprise *in vitro*, *in situ*, *ex vivo*, and *in vivo* cells.
82. (new) The method of Claim 80, wherein said bioluminescent polypeptide comprises luciferase.
83. (new) The method of Claim 80, wherein said bioluminescent polypeptide comprises a polypeptide selected from the group consisting of luciferase, aequorin, halistaurin, phialidin, obelin, mnemiopsin, and berovin.
84. (new) The method of Claim 80, wherein said imaging agent is luciferin.
85. (new) The method of Claim 80 wherein said cells comprise tumor cells.
86. (new) The method of Claim 85, wherein said tumor cells are undergoing neovascularization.
87. (new) A method of imaging, comprising:
a) providing cells, a chimeric polypeptide, and an imaging agent; wherein said cells possess or are suspected of possessing polypeptides comprising RGD motifs; wherein said chimeric polypeptide comprises an illumination domain, and a target recognition domain; wherein said illumination domain comprises a luciferin protein; wherein said target recognition

domain comprises an RGD sequence; wherein said imaging agent is luciferin;

- b) administering said chimeric polypeptide to said cells;
- c) administering said imaging agent to said cells; and
- e) measuring the activity of said illumination domain by detecting signal from said illumination domain.

88. (new) The method of Claim 87, wherein said cells comprise *in vitro*, *in situ*, *ex vivo*, and *in vivo* cells.

89. (new) The method of Claim 87 wherein said cells comprise tumor cells.

90. (new) The method of Claim 89, wherein said tumor cells are undergoing neovascularization.

91. (new) The method of Claim 87, wherein said RGD sequence is SEQ ID NO: 1.

92. (new) A method of imaging, comprising:

- a) providing cells, a chimeric polypeptide, and an imaging agent; wherein said cells possess or are suspected of possessing polypeptides comprising RGD motifs; wherein said chimeric polypeptide comprises an illumination domain, and a target recognition domain; wherein said illumination

domain comprises a bioluminescent polypeptide; wherein said target recognition domain comprises an RGD sequence;

- b) administering said chimeric polypeptide to said cells;
- c) administering said imaging agent to said cells; and
- e) measuring the activity of said illumination domain by detecting signal from said illumination domain.

93. (new) The method of Claim 92, wherein said cells comprise *in vitro*, *in situ*, *ex vivo*, and *in vivo* cells.

94. (new) The method of Claim 92 wherein said cells comprise tumor cells.

95. (new) The method of Claim 94, wherein said tumor cells are undergoing neovascularization.

96. (new) The method of Claim 92, wherein said bioluminescent polypeptide comprises luciferase.

97. (new) The method of Claim 92, wherein said bioluminescent polypeptide comprises a polypeptide selected from the group consisting of luciferase, aequorin, halistaurin, phialidin, obelin, mnemiopsin, and berovin.

98. (new) The method of Claim 92, wherein said RGD sequence is SEQ ID NO: 1.